



Incidental Harassment Authorization

The San Francisco Bay Area Water Emergency Transportation Authority (WETA), Pier 9, Suite 111, The Embarcadero, San Francisco, California 94111, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371 (a)(5)(D)) and 50 CFR 216.107 to take, by Level A and Level B harassment only, small numbers of marine mammals incidental to conducting their Central Bay Operations and Maintenance Facility Project in Alameda, California, contingent upon the following conditions:

1. This Incidental Harassment Authorization (IHA) is valid for 1 year from August 1, 2017 through July 31, 2018.
2. This IHA is valid only for pile driving and removal activities associated with the Central Bay Operations and Maintenance Facility Project in San Francisco Bay, CA.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of WETA, its designees, and work crew personnel operating under the authority of this IHA.
 - (b) The species authorized for taking are summarized in Table 1.
 - (c) The taking, by Level B harassment only, is limited to the species listed in condition 3(b). See Table 1 for numbers of take authorized.

Table 1. Authorized Take Numbers.

Species	Authorized Take	
	Level A	Level B
Harbor seal	18	467
California sea lion	0	149
Northern elephant seal	0	18



Northern fur seal	0	10
Harbor porpoise	0	10
Gray whale	0	2
Bottlenose dolphin	0	52

(d) The taking by injury (Level A harassment), serious injury, or death of the species listed in condition 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA, unless authorization of take by Level A harassment is listed in condition 3(b) of this Authorization.

(e) WETA shall conduct briefings between construction supervisors and crews, marine mammal monitoring team, and WETA staff prior to the start of all pile driving and removal activities, and when new personnel join the work.

4. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures.

(a) For all pile driving and removal, WETA shall implement a minimum shutdown zone of 30 m radius around the pile. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease.

(b) For in-water heavy machinery work other than pile driving (*e.g.*, standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 meters, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.

(c) WETA shall establish monitoring locations as described below. Please also refer to the Marine Mammal Monitoring Plan (see www.nmfs.noaa.gov/pr/permits/incidental/construction.htm).

i. For all pile driving and removal activities, a minimum of two observers shall be deployed, with one positioned to achieve optimal monitoring of the shutdown zone and the second positioned to achieve optimal monitoring of surrounding waters of Alameda Point and portions of San Francisco Bay. If practicable, the second observer should be deployed to an elevated position with clear sight lines to the Project area.

ii. These observers shall record all observations of marine mammals, regardless of distance from the pile being driven, as well as behavior and potential behavioral reactions of the animals. Observations near Alameda Point shall be distinguished from those in the nearshore waters of San Francisco Bay.

iii. All observers shall be equipped for communication of marine mammal observations amongst themselves and to other relevant personnel (*e.g.*, those necessary to effect activity delay or shutdown).

(d) Monitoring shall take place from thirty minutes prior to initiation of pile driving and removal activity through thirty minutes post-completion of pile driving and removal activity. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals shall be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior shall be monitored and documented. Monitoring shall occur throughout the time required to drive a pile. The shutdown zone must be determined to be clear during periods of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

(e) If a marine mammal approaches or enters the shutdown zone, all pile driving and removal activities at that location shall be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal

has voluntarily left and been visually confirmed beyond the shutdown zone or fifteen minutes have passed without re-detection of small cetaceans and pinnipeds and 30 minutes for gray whales.

(f) Level A and Level B zones may be modified if additional hydroacoustic measurements of construction activities have been conducted and NMFS has approved of the revised zones.

(g) Using delay and shut-down procedures, if a species for which authorization has not been granted (including but not limited to Guadalupe fur seals and humpback whales) or if a species for which authorization has been granted but the authorized takes are met, approaches or is observed within the Level B harassment zone, activities will shut down immediately and not restart until the animals have been confirmed to have left the area.

(h) Monitoring shall be conducted by qualified observers, as described in the Monitoring Plan. Trained observers shall be placed from the best vantage point(s) practicable to monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator. Observer training must be provided prior to project start and in accordance with the monitoring plan, and shall include instruction on species identification (sufficient to distinguish the species listed in 3(b)), description and categorization of observed behaviors and interpretation of behaviors that may be construed as being reactions to the specified activity, proper completion of data forms, and other basic components of biological monitoring, including tracking of observed animals or groups of animals such that repeat sound exposures may be attributed to individuals (to the extent possible).

(i) WETA shall use soft start techniques recommended by NMFS for impact pile

driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer.

(j) Sound attenuation devices - Approved sound attenuation devices (*e.g.* bubble curtain, pile cushion) shall be used during impact pile driving operations. WETA shall implement the necessary contractual requirements to ensure that such devices are capable of achieving optimal performance, and that deployment of the device is implemented properly such that no reduction in performance may be attributable to faulty deployment.

(k) Pile driving shall only be conducted during daylight hours.

5. Monitoring

The holder of this Authorization is required to conduct marine mammal and hydroacoustic monitoring during pile driving and removal activities. Marine mammal and hydroacoustic monitoring and reporting shall be conducted in accordance with the Monitoring Plans.

Marine Mammal Monitoring

(a) WETA shall collect sighting data and behavioral responses to pile driving and removal for marine mammal species observed in the region of activity during the period of activity. All observers shall be trained in marine mammal identification and behaviors, and shall have no other construction-related tasks while conducting monitoring.

(b) For all marine mammal monitoring, the information shall be recorded as described in the Monitoring Plan.

Hydroacoustic Monitoring

(a) The monitoring will be done in accordance with the methodology outlined in the Hydroacoustic Monitoring Plan (see Appendix B of WETA's application for more information on this Plan, including the methodology, equipment, and reporting information). The monitoring is based on dual metric criteria that will include: the following:

- i. Establish the distance to the 206-dB peak sound pressure criteria;
- ii. Verify the extent of Level A harassment zones for marine mammals; and
- iii. Verify the attenuation provided by bubble curtains.
- iv. Provide all monitoring data to NMFS. The reports will be submitted bi-weekly, unless WETA proposes to modify the zones based on the hydroacoustic measurement, in which case WETA would report those data before zone modification. The reports would include the following information:

- A. Size and type of piles;
- B. A detailed description of the noise attenuation device, including design specifications;
- C. The impact hammer energy rating used to drive the piles, and the make and model of the hammer and the output energy;
- D. The physical characteristics of the bottom substrate into which the piles were driven;
- E. The depth of water in which the pile was driven;
- F. The depth into the substrate that the pile was driven;
- G. A description of the sound monitoring equipment;
- H. The distance between hydrophones and pile;

- I. The depth of the hydrophones and depth of water at hydrophone locations;
- J. The distance from the pile to the water's edge;
- K. The total number of strikes to drive each pile and for all piles driven during a 24-hour period;
- L. The results of the hydroacoustic monitoring, as described under Signal Processing (an example table is provided in Figure 3 for reporting the results of the monitoring);
- M. The distance at which peak, cumulative SEL, and RMS values exceed the respective threshold values;
- N. The 30 second average for the duration of each pile;
- O. The spectra graphs for each pile type; and
- P. A description of any observable fish, marine mammal, or bird behavior in the immediate area and, if possible, correlation to underwater sound levels occurring at that time.

(b) A minimum of five piles of each size and type of piles to be impact driven will be monitored, including five of the 36-inch-diameter donut piles, five of the 42-inch-diameter guide piles; and five of the 24-inch-diameter dolphin piles; and two piles of the 42 in steel piles and 14 in H piles to be vibratory drivne will be monitored.

(c) One hydrophone will be placed at mid-water depth at the nearest distance, approximately 10 meters, from each pile being monitored. An additional hydrophone will be placed at mid-water depth at a distance of 20 to 50 meters from the pile to provide two sound-level readings during ambient and pile driving conditions. A third hydrophone may be deployed at a greater distance (*e.g.*, 100 meters or further).

(d) Underwater sound levels will be continuously monitored during the entire duration of each pile being driven.

(e) The peak, RMS (impulse level), and SEL level of each strike will be monitored in real time. The cSEL will also be monitored live, assuming no contamination from other noise sources.

(f) Sound levels will be measured in dB re: 1 μ Pa.

6. Reporting

The holder of this Authorization is required to:

(a) Submit a draft report on all monitoring conducted under the IHA within ninety days of the completion of marine mammal monitoring, or sixty days prior to the issuance of any subsequent IHA for projects at the Project area, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the informational elements described in the Monitoring Plan, at minimum (see www.nmfs.noaa.gov/pr/permits/incidental/construction.htm), and shall also include:

i. Detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any.

ii. Description of attempts to distinguish between the number of individual animals taken and the number of incidents of take, such as ability to track groups or individuals.

iii. An estimated total take estimate extrapolated from the number of marine mammals observed during the course of construction activities, if necessary.

(b) Reporting injured or dead marine mammals:

i. In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as a serious injury or mortality, WETA shall immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS. The report must include the following information:

- A. Time and date of the incident;
- B. Description of the incident;
- C. Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- D. Description of all marine mammal observations in the 24 hours preceding the incident;
- E. Species identification or description of the animal(s) involved;
- F. Fate of the animal(s); and
- G. Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with WETA to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. WETA may not resume their activities until notified by NMFS.

ii. In the event that WETA discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), WETA shall immediately report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS.

The report must include the same information identified in 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WETA to determine whether additional mitigation measures or modifications to the activities are appropriate.

iii. In the event that WETA discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), WETA shall report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. WETA shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.



 Donna S. Wieting
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Date **AUG 01 2017**